guideline recommendations among MAs and NHWs with uncontrolled type-2 diabetes. **METHODS:** A cross-sectional secondary data analysis was conducted using the continuous NHANES from 2003 to 2010. Inclusion criteria were subjects aged 20 to <80 years identifying themselves as MA or NHW, self-reporting as having been told by a provider that they have diabetes, have had diabetes for 1 or more years with a hemoglobin A1c of ≥7%. The outcome was defined as reporting the use of anti-diabetic medications recommended by the AACE/ACE 2009 guidelines based on the A1c level category (6.5%-7.5%, 7.6%-9% or >9%). Univariate and multivariate logistic regression analyses were conducted to determine the likelihood of being on recommended treatment across race/ethnicity controlling for demographic, clinical, and health care access characteristics and cohort year. **RESULTS:** 528 individuals (248 MAs and 280 NHWs) met inclusion criteria. Mean age was 48(SD=12), 54% female, 82% had insurance coverage, 94% prescription drug coverage and 94% had a routine place for health care. Forty-seven percent of individuals were on recommended treatment of which 40% were MAs and 60% were NHWs. Race/ethnicity, income level, insurance coverage, routine place of health care, anti-diabetic medication use and cohort year were included in the multivariate analysis. The final model showed routine place of care, anti-diabetic medication, and cohort year as statistically significant($p<0.05$). It found that, with borderline statistical significance, NHWs were more likely to receive recommended therapies compared to MAs(OR 1.2,95%CI0.99-1.47,$p=0.067$). **CONCLUSIONS:** Only 47% of participants received recommended therapy. Routine place of care, anti-diabetic medication use and cohort year were significant predictors but race/ethnicity was borderline significant.

PDB19

FRAMINGHAM RISK SCORE ESTIMATES HIGHER CVD RISK THAN UKPDS RISK ENGINE IN NEWLY DIAGNOSED TYPE 2 DIABETES MELLITUS PATIENTS IN NORTH INDIA

Smruthi Raj NR[1], Bansal D[1], Bhansali A[2]
[1]*National Institute of Pharmaceutical Research and Education, Mohali, Punjab, India,* [2]*Post Graduate Institute of Medical Education and Research*

OBJECTIVES: To assess ten year cardiovascular disease (CVD) risk in newly diagnosed type 2 diabetes mellitus (duration of diagnosis ≤ 6 months) patients using Framingham risk score(FRS) and UK Prospective Diabetes Study (UKPDS) Risk Engine in a public tertiary care hospital in North India and to assess the agreement between both the risk scores. **METHODS:** This is a prospective, observational, questionnaire based study. Patients aged 18-70 years of either sex were recruited and data were collected by oral interview and clinical records of patients after obtaining informed consent from patients. Ten year CVD risk was calculated for 324 patients using FRS and UKPDS Risk Engine. FRS uses participant age, sex, total cholesterol, high-density lipoprotein cholesterol, smoking status, blood pressure and presence or absence of diabetes. UKPDS Risk Engine, a diabetes specific algorithm; uses HbA1c and ethnicity of the patient in addition, for assessing ten year CVD risk. **RESULTS:** Out of 324 patients [males (n) = 149; females (n) = 175], using Framingham risk score 19.1% are estimated with high risk, 23.1% as moderate risk, 26.2 as low risk and 31.5% as very low risk. The corresponding figures using UKPDS risk engine are 7.7%, 13.9%, 10.8% and 67.6%, respectively. Inter- rater agreement assessed using weighted Kappa statistic showed a poor agreement between both scoring systems with a k value of 0.18 (95% CI 0.12-0.23). **CONCLUSIONS:** Framingham risk score overestimated the ten year CVD risk compared to UKPDS Risk Engine. As till date, CVD risk score development and comparison studies were limited to European and American subjects, this study presents a valuable contribution regarding Indian type 2 diabetes patients.

PDB20

THE IMPACT OF CONCOMITANT METFORMIN ON MORTALITY AND OTHER SERIOUS OUTCOMES IN PEOPLE WITH TYPE 2 DIABETES TREATED WITH INSULIN

Holden SE, Currie CJ
Cardiff University, Cardiff, UK

OBJECTIVES: To determine whether there was an association between insulin dose and all-cause mortality and other serious events in people with type 2 diabetes treated with insulin plus metformin, and to determine if concomitant metformin with insulin reduced the risk of adverse outcome versus insulin monotherapy. **METHODS:** For this retrospective cohort study, subjects with type 2 diabetes who progressed to treatment with insulin monotherapy or insulin plus metformin from 2000 onwards were identified from the UK Clinical Practice Research Datalink (CPRD). The risk of all-cause mortality and a combined endpoint of any incident major cardiovascular event (MACE), cancer, or death were compared using the Cox proportional hazards model. Weight-standardised daily prescribed insulin dose (iu/kg/day) was modelled as a time-dependent, continuous co-variable. **RESULTS:** 13,240 subjects were identified. There were 1,840 deaths and 1,751 combined events (excluding those with a history of large vessel disease or cancer). The corresponding event rates were 43.7 deaths and 62.3 combined events per 1,000 person-years. For all-cause mortality, the adjusted hazard ratio (aHR) for insulin dose (relating to an increase of 1 iu/kg/day) was 1.81 (95% CI 1.66 to 1.98) in the combined insulin group (insulin ± metformin) and 1.39 (95% CI 1.10 to 1.76) in the insulin plus metformin group. For people in the combined insulin group (insulin ± metformin), the aHR for concomitant metformin was 0.48 (95% CI 0.42 to 0.54). These patterns were similar for the combined endpoint. **CONCLUSIONS:** There was a dose-response association between insulin dose and all-cause mortality in people treated with insulin plus concomitant metformin. Concomitant metformin was associated with a halving of the risk of death in people with type 2 diabetes injecting insulin.

PDB21

STATUS OF RETINOPATHY IN TYPE 2 DIABETES MELLITUS PATIENTS OF NORTH INDIAN POPULATION

Esam HP[1], Bansal D[1], Gudala K[1], Bhansali A[2]
[1]*National Institute of Pharmaceuitical Education and Research, Mohali, India,* [2]*Post Graduate Institute of Medical Education and Research*

OBJECTIVES: The aim of the study was to assess the prevalence and risk factors of diabetic retinopathy (DR) in type 2 diabetes mellitus patients (T2DM) of North India. **METHODS:** It is a prospective observational study conducted at endocrinology clinic of a public tertiary care hospital in north India. Patients of either gender with greater than 18 years of age and having the diagnosis of T2DM were recruited in the study. Each and every patient had undergone fundus photography examination and data was taken from patient's medical records. Binary logistic regression was done to assess the risk factors. **RESULTS:** A total of 2,006 T2DM subjects were recruited in the study with the mean age of 53.8 ± 7.88 years, and mean duration of diabetes 10.5 ± 7.3 years, among them 505 subjects were found to have DR accounting for 25.2% (95% confidence interval (CI), 23.2-27.07) prevalence. Binary logistic regression analysis has shown that female gender (Odds ratio (OR), 1.42, CI 1.1-1.9, $p = 0.01$), smoking (OR, 2.1, CI 1.3-3.3, $p = 0.001$) and duration of diabetes OR, 1.07, CI 1.05-1.09, $p <0.001$) were significantly associated with increased risk of DR. **CONCLUSIONS:** This study showed higher prevalence of DR in Indian population thus suggesting a need of regular eye examination.

PDB22

REGIONAL ESTIMATES OF THE PREVALENCE OF DIABETES MELLITUS IN GERMANY FOR 2011 AND 2022 BASED ON PRESCRIPTION DATA

Willert T[1], Walker J[2], Frenzel A[2], Schramm W[1]
[1]*Heilbronn University, Heilbronn, Germany,* [2]*IMS HEALTH, Frankfurt/Main, Germany*

OBJECTIVES: In Germany, regional data on diabetes prevalence are scarce. Robust regional prevalence estimates are required for allocating limited health care resources appropriately. The aim of this study was to determine the regional diabetes prevalence in Germany for 2011 and 2022. **METHODS:** A large database containing 80 percent of all prescriptions redeemed in German pharmacies and accounted by the statutory health insurance (SHI) was analyzed. By defining a prescription filter for anti-diabetic agents, the numbers of drug treated diabetic patients in different age and sex groups were estimated for all 16 federal states in Germany. A multiple linear regression model was used to adjust the values to the whole SHI population with the help of an additional database containing exhaustive drug sales data. Crude prevalence was calculated using SHI member statistics. By using population data of the federal statistical office, age- and sex-standardized prevalences for 2011 were estimated and projected to the year 2022. **RESULTS:** In total, 5809403 patients were found for 2011, which means a crude prevalence of 8.38% (standardized: 8.18%) for Germany. The highest prevalence was found in the East German state Saxony-Anhalt with 12.74% (12.13%), the lowest in the northernmost state Schleswig-Holstein with 6.05% (6.07%). Prevalence was higher in men with 8.84% (8.68%) than in women with 7.98% (7.71%). In 2022, the standardized total prevalence amounts to 9.34% in Germany. **CONCLUSIONS:** This method to estimate diabetes prevalence by means of prescription data presents valid results compared to other epidemiological studies. A simple, fast and re-usable algorithm allows calculating nationwide prevalence estimates on a regional level by secondary use of large data sources. Quick analyses and demographic forecasts can support care providers and payors to plan health care and expenses more efficiently to match current and future regional demand.

PDB23

CHANGES IN PATIENT CHARACTERISTICS AND TREATMENT PATTERNS AMONG PATIENTS WITH TYPE 2 DIABETES IN THE UNITED STATES FROM 2006-2013

Annunziata K[1], Sternbach N[2]
[1]*Kantar Health, Princeton, NJ, USA,* [2]*Kantar Health, New York, NY, USA*

OBJECTIVES: Type 2 diabetes (T2D) continues to be a public health concern, affecting an estimated 371 million of the world's population. The objective of this analysis is to review epidemiologic and treatment pattern trends among US adults with T2D. **METHODS:** This analysis utilized cross-sectional data from the US National Health and Wellness Survey (NHWS) from 2006 (n=62,834) through 2013 (n=75,000). A stratified random sampling based on gender, age, and race/ethnicity was used to ensure representativeness to the adult population, based on the US Census Bureau. Descriptive analyses were conducted by each year to determine changes in the overall T2D population with respect to demographics, HbA1c levels, complications, treatment, and time-to-insulin or oral/non-insulin injectable medications. **RESULTS:** The overall prevalence of T2D fluctuated slightly from 2006 to 2013, ranging from 9.2% to 10.2% over time. While the mean age at diagnosis for T2D patients has been consistently in the late forties, from 2006 to 2013 the mean age at diagnosis has decreased by 1.5 years overall (49.9 to 48.4 years). Though the majority of patients are non-Hispanic White, there has been a slow increase in the proportion of patients who are African-American or Hispanic (24.5% in 2006 vs 26.6% in 2013). The proportion of patients who are using an oral medication, insulin, or non-insulin injectable has steadily increased (80.4% in 2006 to 82.5% in 2013). Mean years from diagnosis to using insulin has steadily increased, as well as usage of newer classes of medications such as GLP-1 (1.9% in 2006 to 4.2% in 2013). Knowledge of HbA1c has increased steadily from 2006 to 2013. **CONCLUSIONS:** While some of trends among US adult T2D patients have remained steady, since 2006 there has been earlier diagnosis, more Non-White patients, increases in treatment, and greater HbA1c awareness.

PDB24

PREVALENCE AND ECONOMIC BURDEN OF DIABETES IN AFRICA

Ondere L, Garfield S, Hertz D
GfK Market Access, Wayland, MA, USA

OBJECTIVES: Rising rates of diabetes in Africa have triggered increased demand for affordable medical solutions. This analysis sought to quantify the burden of diabetes in Africa, and identify regions where disease burden creates opportunity for pharmaceutical and medical device interventions. **METHODS:** Data from the International Diabetes Federation was used to estimate the prevalence of diabetes mellitus and the mean national expenditure in 53 African countries. A systematic literature search was conducted to capture current disease management protocols and practice in Africa. **RESULTS:** In 2013, there were an estimated 33.2 million